

## Mastering Data Warehouse Design Relational And Dimensional Techniques

"This 10-volume compilation of authoritative, research-based articles contributed by thousands of researchers and experts from all over the world emphasized modern issues and the presentation of potential opportunities, prospective solutions, and future directions in the field of information science and technology"--Provided by publisher.

With this textbook, Vaisman and Zimányi deliver excellent coverage of data warehousing and business intelligence technologies ranging from the most basic principles to recent findings and applications. To this end, their work is structured into three parts. Part I describes "Fundamental Concepts" including multi-dimensional models; conceptual and logical data warehouse design and MDX and SQL/OLAP. Subsequently, Part II details "Implementation and Deployment," which includes physical data warehouse design; data extraction, transformation, and loading (ETL) and data analytics. Lastly, Part III covers "Advanced Topics" such as spatial data warehouses; trajectory data warehouses; semantic technologies in data warehouses and novel technologies like Map Reduce, column-store databases and in-memory databases. As a key characteristic of the book, most of the topics are presented and illustrated using application tools. Specifically, a case study based on the well-known Northwind database illustrates how the concepts presented in the book can be implemented using Microsoft Analysis Services and Pentaho Business Analytics. All chapters are summarized using review questions and exercises to support comprehensive student learning. Supplemental material to assist instructors using this book as a course text is available at <http://cs.ulb.ac.be/DWSDIbook/>, including electronic versions of the figures, solutions to all exercises, and a set of slides accompanying each chapter. Overall, students, practitioners and researchers alike will find this book the most comprehensive reference work on data warehouses, with key topics described in a clear and educational style.

As it is with building a house, most of the work necessary to build a data warehouse is neither visible nor obvious when looking at the completed product. While it may be easy to plan for a data warehouse that incorporates all the right concepts, taking the steps needed to create a warehouse that is as functional and user-friendly as it is theoreti

This book contains the refereed proceedings of the 16th International Conference on Business Information Systems, BIS 2013, held in Poznań, Poland, in June 2013. The theme of this year's conference was "Business Applications on the Move," reflecting the growing usage of mobile devices in business applications and its repercussions on business processes and information management. The 18 revised full papers were carefully reviewed and selected from 52 submissions. They are grouped into six sections on modern enterprises and mobile ERP, business models and BPM, linked data and ontologies, recommendations and content analysis, knowledge discovery, and IT frameworks and systems architecture.

Data Warehousing in the Age of the Big Data will help you and your organization make the most of unstructured data with your existing data warehouse. As Big Data continues to revolutionize how we use data, it doesn't have to create more confusion. Expert author Krish Krishnan helps you make sense of how Big Data fits into the world of data warehousing in clear and concise detail. The book is presented in three distinct parts. Part 1 discusses Big Data, its technologies and use cases from early adopters. Part 2 addresses data warehousing, its shortcomings, and new architecture options, workloads, and integration techniques for Big Data and the data warehouse. Part 3 deals with data governance, data visualization, information life-cycle management, data scientists, and implementing a Big Data-ready data warehouse. Extensive appendixes include case studies from vendor implementations and a special segment on how we can build a healthcare information factory. Ultimately, this book will help you navigate through the complex layers of Big Data and data warehousing while providing you information on how to effectively think about using all these technologies and the architectures to design the next-generation data warehouse. Learn how to leverage Big Data by effectively integrating it into your data warehouse. Includes real-world examples and use cases that clearly demonstrate Hadoop, NoSQL, HBASE, Hive, and other Big Data technologies Understand how to optimize and tune your current data warehouse infrastructure and integrate newer infrastructure matching data processing workloads and requirements

The "father of data warehousing" incorporates the latest technologies into his blueprint for integrated decision support systems Today's corporate IT and data warehouse managers are required to make a small army of technologies work together to ensure fast and accurate information for business managers. Bill Inmon created the Corporate Information Factory to solve the needs of these managers. Since the First Edition, the design of the factory has grown and changed dramatically. This Second Edition, revised and expanded by 40% with five new chapters, incorporates these changes. This step-by-step guide will enable readers to connect their legacy systems with the data warehouse and deal with a host of new and changing technologies, including Web access mechanisms, e-commerce systems, ERP (Enterprise Resource Planning) systems. The book also looks closely at exploration and data mining servers for analyzing customer behavior and departmental data marts for finance, sales, and marketing.

This exceptional work provides readers with an introduction to the state-of-the-art research on data warehouse design, with many references to more detailed sources. It offers a clear and a concise presentation of the major concepts and results in the subject area. Malinowski and Zimányi explain conventional data warehouse design in detail, and additionally address two innovative domains recently introduced to extend the capabilities of data warehouse systems: namely, the management of spatial and temporal information.

Praise for the First Edition "This is the most usable decision support systems text. [i]t is far better than any other text in the field" —Computing Reviews Computer-based systems known as decision support systems (DSS) play a vital role in helping professionals across various fields of practice understand what information is needed, when it is needed, and

in what form in order to make smart and valuable business decisions. Providing a unique combination of theory, applications, and technology, Decision Support Systems for Business Intelligence, Second Edition supplies readers with the hands-on approach that is needed to understand the implications of theory to DSS design as well as the skills needed to construct a DSS. This new edition reflects numerous advances in the field as well as the latest related technological developments. By addressing all topics on three levels—general theory, implications for DSS design, and code development—the author presents an integrated analysis of what every DSS designer needs to know. This Second Edition features: Expanded coverage of data mining with new examples Newly added discussion of business intelligence and transnational corporations Discussion of the increased capabilities of databases and the significant growth of user interfaces and models Emphasis on analytics to encourage DSS builders to utilize sufficient modeling support in their systems A thoroughly updated section on data warehousing including architecture, data adjustment, and data scrubbing Explanations and implications of DSS differences across cultures and the challenges associated with transnational systems Each chapter discusses various aspects of DSS that exist in real-world applications, and one main example of a DSS to facilitate car purchases is used throughout the entire book. Screenshots from JavaScript® and Adobe® ColdFusion are presented to demonstrate the use of popular software packages that carry out the discussed techniques, and a related Web site houses all of the book's figures along with demo versions of decision support packages, additional examples, and links to developments in the field. Decision Support Systems for Business Intelligence, Second Edition is an excellent book for courses on information systems, decision support systems, and data mining at the advanced undergraduate and graduate levels. It also serves as a practical reference for professionals working in the fields of business, statistics, engineering, and computer technology.

Do you enjoy completing puzzles? Perhaps one of the most challenging (yet rewarding) puzzles is delivering a successful data warehouse suitable for data mining and analytics. The Analytical Puzzle describes an unbiased, practical, and comprehensive approach to building a data warehouse which will lead to an increased level of business intelligence within your organization. New technologies continuously impact this approach and therefore this book explains how to leverage big data, cloud computing, data warehouse appliances, data mining, predictive analytics, data visualization and mobile devices. Here are the main objectives for each of the book's 19 chapters: • Chapter 1: Develop a foundational knowledge of data warehousing, business intelligence and analytics • Chapter 2: Build the business case needed to sell your data warehousing project, and then produce a project plan that avoids common pitfalls • Chapter 3: Elicit and organize business intelligence and data warehousing business requirements • Chapter 4: Specify the technical architecture of the data warehousing system, including software and infrastructure components, technology stack, and non-functional requirements. Gain an understanding of cloud based data warehousing and data warehouse appliances • Chapter 5: Learn about data attributes including metrics and key performance indicators (KPIs), the raw material of data warehousing and business intelligence • Chapter 6: Learn about data modeling and how to apply design patterns for each part of the data warehouse • Chapter 7: Speak the dimensional modeling language of measures, dimensions, facts, cubes, stars, and snowflakes • Chapter 8: Organize a successful data governance program. Learn how to manage metadata for your data warehousing and business intelligence project • Chapter 9: Identify useful data sources and implement a data quality program • Chapter 10: Use database technology for your data warehousing project, and understand the impact of data warehouse appliances, big data, in memory databases, columnar databases and OnLine Analytical Processing (OLAP) • Chapter 11: Apply data integration and understand the role data mapping, data cleansing, data transformation, and loading data play in a successful data warehouse • Chapter 12: Use the business intelligence (BI) operations of slice, dice, drill down, roll up, and pivot to analyze and present data • Chapter 13: Learn about descriptive and predictive statistics, and calculate mean, median, mode, variance and standard deviation • Chapter 14: Harness analytical methods such as regression analysis, data mining, and statistics to make profitable decisions and anticipate the future • Chapter 15: Appreciate the components and design patterns that compose a successful analytic application • Chapter 16: Gain an understanding of the uses and benefits of scorecards and dashboards including support of mobile device users • Chapter 17: Gain insight into applications of business intelligence that could profit your organization, including risk management, finance, marketing, government, healthcare, science and sports • Chapter 18: Perform customer analytics to better understand and segment your customers • Chapter 19: Test, roll out, and sustain the data warehouse

Best practices and invaluable advice from world-renowned data warehouse experts In this book, leading data warehouse experts from the Kimball Group share best practices for using the upcoming "Business Intelligence release" of SQL Server, referred to as SQL Server 2008 R2. In this new edition, the authors explain how SQL Server 2008 R2 provides a collection of powerful new tools that extend the power of its BI toolset to Excel and SharePoint users and they show how to use SQL Server to build a successful data warehouse that supports the business intelligence requirements that are common to most organizations. Covering the complete suite of data warehousing and BI tools that are part of SQL Server 2008 R2, as well as Microsoft Office, the authors walk you through a full project lifecycle, including design, development, deployment and maintenance. Features more than 50 percent new and revised material that covers the rich new feature set of the SQL Server 2008 R2 release, as well as the Office 2010 release Includes brand new content that focuses on PowerPivot for Excel and SharePoint, Master Data Services, and discusses updated capabilities of SQL Server Analysis, Integration, and Reporting Services Shares detailed case examples that clearly illustrate how to best apply the techniques described in the book The accompanying Web site contains all code samples as well as the sample database used throughout the case studies The Microsoft Data Warehouse Toolkit, Second Edition provides you with the knowledge of how and when to use BI tools such as Analysis Services and Integration Services to accomplish your most essential data warehousing tasks.

Fully revised, updated, and expanded, Relational Database Design and Implementation, Third Edition is the most lucid and effective introduction to the subject available for IT/IS professionals interested in honing their skills in database design, implementation, and administration. This book provides the conceptual and practical information necessary to develop a design and management scheme that ensures data accuracy and user satisfaction while optimizing performance, regardless of experience level or choice of DBMS. The book begins by reviewing basic concepts of databases and database design, then briefly reviews the SQL one would use to create databases. Topics such as the relational data model, normalization, data entities and Codd's Rules (and why they are important) are covered clearly and concisely but without resorting to "Dummies"-style talking down to the reader. Supporting the book's step-by-step instruction are three NEW case studies illustrating database planning, analysis, design, and management practices. In addition to these real-world examples, which include object-relational design techniques, an entirely NEW section consisting of three chapters is devoted to database implementation and management issues. \* Principles needed to understand the basis of good relational database design and implementation practices. \* Examples to illustrate core concepts for enhanced comprehension and to put the book's practical instruction to work. \* Methods for tailoring DB design to the environment in which the database will run and the uses to which it will be put. \* Design approaches that ensure data accuracy and consistency. \* Examples of how design can inhibit or boost database application performance. \* Object-relational design techniques, benefits, and examples. \* Instructions on

how to choose and use a normalization technique. \* Guidelines for understanding and applying Codd's rules. \* Tools to implement a relational design using SQL. \* Techniques for using CASE tools for database design.

The conference series BIR (Business Informatics Research) was established 10 years ago in Rostock as an initiative of researchers from Swedish and German universities. The objective was to create a global forum where researchers in business informatics, seniors as well as juniors, could meet, collaborate and - change ideas. Over the years BIR has matured into a series of international conferences, typically organized in the Baltic Sea region, including Norway and Iceland. A steering committee ensures the high quality of the BIR proceedings. We are very proud that this year an international and very well known editor has agreed to publish selected papers of the conference. The interest in the conference in terms of submissions and participation has steadily increased over the years. This year, we received 53 contributions among which 14 submissions were accepted as long papers and 4 as short papers. A few additional contributions were invited for presentation at the conference. The selection was carefully carried out by an International Program Committee. The result is a set of interesting and stimulating papers that address important issues such as knowledge management, ontologies, models, work?ow speci?ations, data bases and OLAP. The conference was opened by an invited technical talk by Dr. Klaus Brunnstein from The University of Hamburg who discussed the topic "The Information Society on the Way to Web 3.0: Perspectives, Opportunities and Risks", which is challenging for all of us.

Here it is ... the latest from best-selling author Victoria Bernhardt. This book helps educators think through the selection of the data elements and data tools needed to support quality decisions for improving teaching and learning. It shows you how to use data to help make decisions about strategies to improve student achievement.

This book constitutes the thoroughly refereed post-conference proceedings of the Second International Conference on Data Engineering and Management, ICDEM 2010, held in Tiruchirappalli, India, in July 2010. The 46 revised full papers presented together with 1 keynote paper and 2 tutorial papers were carefully reviewed and selected from numerous submissions. The papers are organized in topical sections on Digital Library; Knowledge and Multimedia; Data Management and Knowledge Extraction; Natural Language Processing; Workshop on Data Mining with Graphs and Matrices.

Data warehousing is one of the hottest business topics, and there's more to understanding data warehousing technologies than you might think. Find out the basics of data warehousing and how it facilitates data mining and business intelligence with *Data Warehousing For Dummies, 2nd Edition*. Data is probably your company's most important asset, so your data warehouse should serve your needs. The fully updated Second Edition of *Data Warehousing For Dummies* helps you understand, develop, implement, and use data warehouses, and offers a sneak peek into their future. You'll learn to: Analyze top-down and bottom-up data warehouse designs Understand the structure and technologies of data warehouses, operational data stores, and data marts Choose your project team and apply best development practices to your data warehousing projects Implement a data warehouse, step by step, and involve end-users in the process Review and upgrade existing data storage to make it serve your needs Comprehend OLAP, column-wise databases, hardware assisted databases, and middleware Use data mining intelligently and find what you need Make informed choices about consultants and data warehousing products *Data Warehousing For Dummies, 2nd Edition* also shows you how to involve users in the testing process and gain valuable feedback, what it takes to successfully manage a data warehouse project, and how to tell if your project is on track. You'll find it's the most useful source of data on the topic!

The data warehousing bible updated for the new millennium Updated and expanded to reflect the many technological advances occurring since the previous edition, this latest edition of the data warehousing "bible" provides a comprehensive introduction to building data marts, operational data stores, the Corporate Information Factory, exploration warehouses, and Web-enabled warehouses. Written by the father of the data warehouse concept, the book also reviews the unique requirements for supporting e-business and explores various ways in which the traditional data warehouse can be integrated with new technologies to provide enhanced customer service, sales, and support-both online and offline-including near-line data storage techniques.

The IBM Informix® Dynamic Server (IDS) has the tools to build a powerful data warehouse infrastructure platform to lower costs and increase profits by doing more with your existing operational data and infrastructure. The Informix Warehouse Feature simplifies the process for design and deployment of a high performance data warehouse. With a state-of-the-art extract, load, and transform (ELT) tool and an Eclipse-based GUI environment that is easy to use, this comprehensive platform provides the foundation you need to cost effectively build and deploy the data warehousing infrastructure, using the IBM Informix Dynamic Server, and needed to enable the development and use of next-generation analytic solutions . This IBM® Redbooks® publication describes the technical information and demonstrates the functions and capabilities of the Informix Dynamic Server Warehouse Feature. It can help you understand how to develop a data warehousing architecture and infrastructure to meet your particular requirements, with the Informix Dynamic Server. It can also enable you to transform and manage your operational data, and use it to populate your data warehouse. With that new data warehousing environment, you can support the data analysis and decision-making that are required as you monitor and manage your business processes, and help you meet your business performance management goals, objectives, and measurements.

This is the first book to provide in-depth coverage of star schema aggregates used in dimensional modeling-from selection and design, to loading and usage, to specific tasks and deliverables for implementation projects Covers the principles of aggregate schema design and the pros and cons of various types of commercial solutions for navigating and building aggregates Discusses how to include aggregates in data warehouse development projects that focus on incremental development, iterative builds, and early data loads

*Data Modeling Made Simple with CA ERwin Data Modeler r8* will provide the business or IT professional with a practical working knowledge of data modeling concepts and best practices, and how to apply these principles with CA ERwin Data Modeler r8. You'll build many CA ERwin data models along the way, mastering first the fundamentals and later in the book the more advanced features of CA ERwin Data Modeler. This book combines real-world experience and best practices with down to earth advice, humor, and even cartoons to help you master the following ten objectives: 1. Understand the basics of data modeling and relational theory, and how to apply these skills using CA ERwin Data Modeler 2. Read a data model of any size and complexity with the same confidence as reading a book 3. Understand the difference between conceptual, logical, and physical models, and how to effectively build these models using CA ERwin's Data Modelers Design Layer Architecture 4. Apply techniques to turn a logical data model into an efficient physical design and vice-versa through forward and reverse engineering, for both 'top down' and bottom-up design 5. Learn how to create reusable domains, naming standards, UDPs, and model templates in CA ERwin Data Modeler to reduce modeling time, improve data quality, and increase enterprise consistency 6. Share data model information with various audiences using model formatting and layout techniques, reporting, and metadata exchange 7. Use the new workspace customization features in CA ERwin Data Modeler r8 to create a workflow suited to your own individual needs 8. Leverage the new Bulk Editing features in CA ERwin Data Modeler r8 for mass metadata updates, as well as import/export with Microsoft Excel 9. Compare and merge model changes using CA ERwin Data Modelers Complete

Compare features 10. Optimize the organization and layout of your data models through the use of Subject Areas, Diagrams, Display Themes, and more Section I provides an overview of data modeling: what it is, and why it is needed. The basic features of CA ERwin Data Modeler are introduced with a simple, easy-to-follow example. Section II introduces the basic building blocks of a data model, including entities, relationships, keys, and more. How-to examples using CA ERwin Data Modeler are provided for each of these building blocks, as well as 'real world' scenarios for context. Section III covers the creation of reusable standards, and their importance in the organization. From standard data modeling constructs such as domains to CA ERwin-specific features such as UDPs, this section covers step-by-step examples of how to create these standards in CA ERwin Data Modeling, from creation, to template building, to sharing standards with end users through reporting and queries. Section IV discusses conceptual, logical, and physical data models, and provides a comprehensive case study using CA ERwin Data Modeler to show the interrelationships between these models using CA ERwin's Design Layer Architecture. Real world examples are provided from requirements gathering, to working with business sponsors, to the hands-on nitty-gritty details of building conceptual, logical, and physical data models with CA ERwin Data Modeler r8. From the Foreword by Tom Bilcze, President, CA Technologies Modeling Global User Community: Data Modeling Made Simple with CA ERwin Data Modeler r8 is an excellent resource for the ERwin community. The data modeling community is a diverse collection of data professionals with many perspectives of data modeling and different levels of skill and experience. Steve Hoberman and Donna Burbank guide newbie modelers through the basics of data modeling and CA ERwin r8. Through the liberal use of illustrations, the inexperienced data modeler is graphically walked through the components of data models and how to create them in CA ERwin r8. As an experienced data modeler, Steve and Donna give me a handbook for effectively using the new and enhanced features of this release to bring my art form to life. The book delves into advanced modeling topics and techniques by continuing the liberal use of illustrations. It speaks to the importance of a defined data modeling architecture with soundly modeled data to assist the enterprise in understanding of the value of data. It guides me in applying the finishing touches to my data designs.

"This book provides an overall view of the emerging field of complex data processing, highlighting the similarities between the different data, issues and approaches"--Provided by publisher.

This book is about using business intelligence as a management information system for supporting managerial decision making. It concentrates primarily on practical business issues and demonstrates how to apply data warehousing and data analytics to support business decision making. This book progresses through a logical sequence, starting with data model infrastructure, then data preparation, followed by data analysis, integration, knowledge discovery, and finally the actual use of discovered knowledge. All examples are based on the most recent achievements in business intelligence. Finally this book outlines an overview of a methodology that takes into account the complexity of developing applications in an integrated business intelligence environment. This book is written for managers, business consultants, and undergraduate and postgraduates students in business administration.

A cutting-edge response to Ralph Kimball's challenge to the data warehouse community that answers some tough questions about the effectiveness of the relational approach to data warehousing Written by one of the best-known exponents of the Bill Inmon approach to data warehousing Addresses head-on the tough issues raised by Kimball and explains how to choose the best modeling technique for solving common data warehouse design problems Weighs the pros and cons of relational vs. dimensional modeling techniques Focuses on tough modeling problems, including creating and maintaining keys and modeling calendars, hierarchies, transactions, and data quality

There are more than one billion documents on the Web, with the count continually rising at a pace of over one million new documents per day. As information increases, the motivation and interest in data warehousing and mining research and practice remains high in organizational interest. The Encyclopedia of Data Warehousing and Mining, Second Edition, offers thorough exposure to the issues of importance in the rapidly changing field of data warehousing and mining. This essential reference source informs decision makers, problem solvers, and data mining specialists in business, academia, government, and other settings with over 300 entries on theories, methodologies, functionalities, and applications.

Mastering Data Warehouse Design Relational and Dimensional Techniques John Wiley & Sons

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Geared to IT professionals eager to get into the all-important field of data warehousing, this book explores all topics needed by those who design and implement data warehouses. Readers will learn about planning requirements, architecture, infrastructure, data preparation, information delivery, implementation, and maintenance. They'll also find a wealth of industry examples garnered from the author's 25 years of experience in designing and implementing databases and data warehouse applications for major corporations. Market: IT Professionals, Consultants.

The year 2010 was a landmark in the history of digital libraries because for the first time this year the ACM/IEEE Joint Conference on Digital Libraries (JCDL) and the annual International Conference on Asia-Pacific Digital Libraries (ICADL) were held together at the Gold Coast in Australia. The combined conferences provided an opportunity for digital library researchers, academics and professionals from across the globe to meet in a single forum to disseminate, discuss, and share their valuable research. For the past 12 years ICADL has remained a major forum for digital library researchers and professionals from around the world in general, and for the Asia-Pacific region in particular. Research and development activities in digital libraries that began almost two decades ago have gone through some distinct phases: digital libraries have evolved from mere networked collections of digital objects to robust information services designed for both specific applications as well as global audiences. Consequently, researchers have focused on various challenges ranging from technical issues such as networked infrastructure and the creation and management of complex digital objects to user-centric issues such as usability, impact and evaluation. Simultaneously, digital preservation has emerged and remained as a major area of influence for digital library research. Research in digital libraries has also been influenced by several socio-economic and legal issues such as the digital divide, intellectual property, sustainability and business models, and so on. More recently, Web 2.

Contains a six-stage plan for starting new warehouse projects and guiding programmers step-by-step until they become a world-class, Agile development team. It describes also

how to avoid or contain the fierce opposition that radically new methods can encounter from the traditionally-minded IS departments found in many large companies. Managing Data in Motion describes techniques that have been developed for significantly reducing the complexity of managing system interfaces and enabling scalable architectures. Author April Reeve brings over two decades of experience to present a vendor-neutral approach to moving data between computing environments and systems. Readers will learn the techniques, technologies, and best practices for managing the passage of data between computer systems and integrating disparate data together in an enterprise environment. The average enterprise's computing environment is comprised of hundreds to thousands computer systems that have been built, purchased, and acquired over time. The data from these various systems needs to be integrated for reporting and analysis, shared for business transaction processing, and converted from one format to another when old systems are replaced and new systems are acquired. The management of the "data in motion" in organizations is rapidly becoming one of the biggest concerns for business and IT management. Data warehousing and conversion, real-time data integration, and cloud and "big data" applications are just a few of the challenges facing organizations and businesses today. Managing Data in Motion tackles these and other topics in a style easily understood by business and IT managers as well as programmers and architects. Presents a vendor-neutral overview of the different technologies and techniques for moving data between computer systems including the emerging solutions for unstructured as well as structured data types Explains, in non-technical terms, the architecture and components required to perform data integration Describes how to reduce the complexity of managing system interfaces and enable a scalable data architecture that can handle the dimensions of "Big Data"

This book constitutes the thoroughly refereed post-conference proceedings of the 18th International Conference on Applications of Declarative Programming and Knowledge Management, INAP 2009, held in Évora, Portugal, in November 2009. The 12 revised full papers presented together with 2 invited talks were carefully reviewed and selected during two rounds of reviewing and improvement. The conference comprehensively covers the impact of programmable logic solvers in the internet society, its underlying technologies, and leading edge applications in industry, commerce, government, and societal services. The topics of the selected papers concentrate on three currently important fields: foundations and extensions of logic programming, databases and query languages, declarative programming with logic languages, and applications thereof.

Here is the ideal field guide for data warehousing implementation. This book first teaches you how to build a data warehouse, including defining the architecture, understanding the methodology, gathering the requirements, designing the data models, and creating the databases. Coverage then explains how to populate the data warehouse and explores how to present data to users using reports and multidimensional databases and how to use the data in the data warehouse for business intelligence, customer relationship management, and other purposes. It also details testing and how to administer data warehouse operation.

The two-volume Advances in Information Systems Development: Bridging the Gap between Academia and Industry constitutes the collected proceedings of the Fourteenth International Conference on Information Systems Development: Methods and Tools, Theory and Practice – ISD'2005 Conference. The focus of these volumes is to examine the exchange of ideas between academia and industry and aims to explore new solutions. The proceedings follow the seven conference tracks highlighted at the Conference: Co-design of Business and IT; Communication and Methods; Human Values of Information Technology; Service Development and IT; Requirements Engineering in the IS Life-Cycle; Semantic Web Approaches and Applications; and Management and IT.

Updated new edition of Ralph Kimball's groundbreaking book on dimensional modeling for data warehousing and business intelligence! The first edition of Ralph Kimball's The Data Warehouse Toolkit introduced the industry to dimensional modeling, and now his books are considered the most authoritative guides in this space. This new third edition is a complete library of updated dimensional modeling techniques, the most comprehensive collection ever. It covers new and enhanced star schema dimensional modeling patterns, adds two new chapters on ETL techniques, includes new and expanded business matrices for 12 case studies, and more. Authored by Ralph Kimball and Margy Ross, known worldwide as educators, consultants, and influential thought leaders in data warehousing and business intelligence Begins with fundamental design recommendations and progresses through increasingly complex scenarios Presents unique modeling techniques for business applications such as inventory management, procurement, invoicing, accounting, customer relationship management, big data analytics, and more Draws real-world case studies from a variety of industries, including retail sales, financial services, telecommunications, education, health care, insurance, e-commerce, and more Design dimensional databases that are easy to understand and provide fast query response with The Data Warehouse Toolkit: The Definitive Guide to Dimensional Modeling, 3rd Edition.

Master the most agile and resilient design for building analytics applications: the Unified Star Schema (USS) approach. The USS has many benefits over traditional dimensional modeling. Witness the power of the USS as a single star schema that serves as a foundation for all present and future business requirements of your organization. Data warehouse legend Bill Inmon and business intelligence innovator, Francesco Puppini, explain step-by-step why the Unified Star Schema is the recommended approach for business intelligence designs today, and show through many examples how to build and use this new solution. This book contains two parts. Part I, Architecture, explains the benefits of data marts and data warehouses, covering how organizations progressed to their current state of analytics, and to the challenges that result from current business intelligence architectures. Chapter 1 covers the drivers behind and the characteristics of the data warehouse and data mart. Chapter 2 introduces dimensional modeling concepts, including fact tables, dimensions, star joins, and snowflakes. Chapter 3 recalls the evolution of the data mart. Chapter 4 explains Extract, Transform, and Load (ETL), and the value ETL brings to reporting. Chapter 5 explores the Integrated Data Mart Approach, and Chapter 6 explains how to monitor this environment. Chapter 7 describes the different types of metadata within the data warehouse environment. Chapter 8 progresses through the evolution to our current modern data warehouse environment. Part II, the Unified Star Schema, covers the Unified Star Schema (USS) approach and how it solves the challenges introduced in Part I. There are eight chapters within Part II: - Chapter 9, Introduction to the Unified Star Schema: Learn about its architecture and use cases, as well as how the USS approach differs from the traditional

approach. · Chapter 10, Loss of Data: Learn about the loss of data and the USS Bridge. Understand that the USS approach does not create any join, and for this reason, it has no loss of data. · Chapter 11, The Fan Trap: Get introduced to the Oriented Data Model convention, and learn the dangers of a fan trap through an example. Differentiate join and association, and realize that an “in-memory association” is the preferred solution to the fan trap. · Chapter 12, The Chasm Trap: Become familiar with the Cartesian product, and then follow along with an example based on LinkedIn, which illustrates that a chasm trap produces unwanted duplicates. See that the USS Bridge is based on a union, which does not create any duplicates. · Chapter 13, Multi-Fact Queries: Distinguish between multiple facts “with direct connection” versus multiple facts “with no direct connection”. Explore how BI tools are capable of building aggregated virtual rows. · Chapter 14, Loops: Learn more about loops and five traditional techniques to solve them. Follow along with an implementation, which will illustrate the solution based on the USS approach. · Chapter 15, Non-Conformed Granularities: Learn about non-conformed granularities, and learn that the Unified Star Schema introduces a solution called “re-normalization”. · Chapter 16, Northwind Case Study. Witness how easy it is to detect the pitfalls of Northwind using the ODM convention. Follow along with an implementation of the USS approach on the Northwind database with various BI tools.

Welcome to the proceedings of the 2010 International Conferences on Database Theory and Application (DTA 2010), and Bio-Science and Bio-Technology (BSBT 2010) – two of the partnering events of the Second International Mega- Conference on Future Generation Information Technology (FGIT 2010). DTA and BSBT bring together researchers from academia and industry as well as practitioners to share ideas, problems and solutions relating to the multifaceted aspects of databases, data mining and biomedicine, including their links to computational sciences, mathematics and information technology. In total, 1,630 papers were submitted to FGIT 2010 from 30 countries, which includes 175 papers submitted to DTA/BSBT 2010. The submitted papers went through a rigorous reviewing process: 395 of the 1,630 papers were accepted for FGIT 2010, while 40 papers were accepted for DTA/BSBT 2010. Of the 40 papers 6 were selected for the special FGIT 2010 volume published by Springer in the LNCS series. 31 papers are published in this volume, and 3 papers were withdrawn due to technical reasons. We would like to acknowledge the great effort of the DTA/BSBT 2010 International Advisory Boards and members of the International Program Committees, as well as all the organizations and individuals who supported the idea of publishing this volume of proceedings, including SERSC and Springer. Also, the success of these two conferences would not have been possible without the huge support from our sponsors and the work of the Chairs and Organizing Committee.

Agile Data Warehouse Design is a step-by-step guide for capturing data warehousing/business intelligence (DW/BI) requirements and turning them into high performance dimensional models in the most direct way: by modelstorming (data modeling ] brainstorming) with BI stakeholders. This book describes BEAM, an agile approach to dimensional modeling, for improving communication between data warehouse designers, BI stakeholders and the whole DW/BI development team. BEAM provides tools and techniques that will encourage DW/BI designers and developers to move away from their keyboards and entity relationship based tools and model interactively with their colleagues. The result is everyone thinks dimensionally from the outset! Developers understand how to efficiently implement dimensional modeling solutions. Business stakeholders feel ownership of the data warehouse they have created, and can already imagine how they will use it to answer their business questions. Within this book, you will learn: Agile dimensional modeling using Business Event Analysis & Modeling (BEAM ) Modelstorming: data modeling that is quicker, more inclusive, more productive, and frankly more fun! Telling dimensional data stories using the 7Ws (who, what, when, where, how many, why and how) Modeling by example not abstraction; using data story themes, not crow's feet, to describe detail Storyboarding the data warehouse to discover conformed dimensions and plan iterative development Visual modeling: sketching timelines, charts and grids to model complex process measurement - simply Agile design documentation: enhancing star schemas with BEAM dimensional shorthand notation Solving difficult DW/BI performance and usability problems with proven dimensional design patterns LawrenceCorr is a data warehouse designer and educator. As Principal of DecisionOne Consulting, he helps clients to review and simplify their data warehouse designs, and advises vendors on visual data modeling techniques. He regularly teaches agile dimensional modeling courses worldwide and has taught dimensional DW/BI skills to thousands of students. Jim Stagnitto is a data warehouse and master data management architect specializing in the healthcare, financial services, and information service industries. He is the founder of the data warehousing and data mining consulting firm Llumino.

The Definitive Volume on Cutting-Edge Exploratory Analysis of Massive Spatial and Spatiotemporal Databases Since the publication of the first edition of Geographic Data Mining and Knowledge Discovery, new techniques for geographic data warehousing (GDW), spatial data mining, and geovisualization (GVis) have been developed. In addition, there has been a cutting-edge response to Ralph Kimball's challenge to the data warehouse community that answers some tough questions about the effectiveness of the relational approach to data warehousing Written by one of the best-known exponents of the Bill Inmon approach to data warehousing Addresses head-on the tough issues raised by Kimball and explains how to choose the best modeling technique for solving common data warehouse design problems Weighs the pros and cons of relational vs. dimensional modeling techniques Focuses on tough modeling problems, including creating and maintaining keys and modeling calendars, hierarchies, transactions, and data quality

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